THE OPTICAL MAGIC LANTERN JOURNAL AND PHOTOGRAPHIC ENLARGER.

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Notices.

THE *Optical Magic Lantern Journal and Photographic Enlarger* is issued on the 15th of every month, price One Penny, and may be obtained from all Newsvendors, Railway News Stalls, Photographic Dealers, or from the Publishers, at the following rates, post free:—

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Editorial communications must be addressed, The Editor; advertisements and business communications to Taylor Brothers, care of the Publishers, Dorset Works, Salisbury Square, Fleet Street, London, E.C.

Notes.

WE observe that the widow of the late Richard A. Proctor, the astronomer, is following in the footsteps of her husband, as we find she is lecturing in Florida, U.S.A., on astronomical subjects. The lectures are illustrated by views of the heavenly bodies, thrown upon the screen by the aid of the optical lantern.

* * *

THE copyright of the *Camera* has recently been purchased by Mr. Jas. Blackmore, and will henceforth be published at 55 and 56, Chancery Lane, W.C.

* * *

EVEN in the far north, in the Orkney Islands, the use of the optical lantern as an educational appliance is beginning to be recognised. Already one church sees how to turn it to good account, and has purchased a lantern and a large supply of slides. For two or three winters these have been sent round to all the congregations in the district, and have served to interest and instruct the children and not a few of their seniors at the yearly soirées and social gatherings. By exchanging the old slides for new ones every year, the interest in the exhibitions is fully maintained, and the lantern is found to be the most attractive feature of these meetings.

* * *

THE Chicago Camera Club, following the example of Boston, intend circulating among the photographic societies of Great Britain a set of one hundred lantern slides illustrative of Chicago.

* * *

IN connection with the West London Mission, "Lantern Lectures for the People" are to be given during the winter at Wardour Hall on Tuesdays, and at Cleveland Hall on Thursdays. The subjects are the popular ones of the day. The lantern is also used on Sundays at Cleveland Hall, and will be brought into requisition to illustrate sermons and lectures.

* * *

THE lamp recently experimented with in France, to be used in the battle-field to search for the killed and wounded is about the size of the head-lights used on American locomotives. It is furnished with a powerful reflector, and the light is produced by the combustion of two magnesium wires.

* * *

The photographic societies throughout the country have now commenced their *lantern evenings*. These are looked forward to with great interest by the members, who have thus an opportunity of exhibiting their work and receiving friendly criticism upon their transparencies.

The Magic Lantern : Its Construction, Illumination, Optics & Uses.

CHAPTER V.—DISSOLVERS.

The production of dissolving views, when these are produced in the most effective way, necessitates the employment of two lanterns, each complete in itself, although it is possible to have the dissolving system embodied in one case, and even worked with one light.

The term *dissolving* is adopted from the appearance the pictures present on the screen. Thus the spectator, while examining the subject on the screen, becomes aware that it is getting slightly confused by the gradual appearing of another and different subject on the same disc, which slowly acquires strength and force, while at the same time the previous picture becomes weaker, until at last it disappears entirely—in short, the one view is dissolved into another. This effect is produced in a variety of ways, which we shall presently explain.

With oil lanterns it is imperative that both lamps be kept burning during the whole of the entertainment. The dissolving effect is produced by means of fans having serrated edges placed in front of the objective. When they were first used for the purpose they were moved to and fro by a rack and pinion, but nowadays this has been greatly simplified, and both fans are attached to one end of a lever, each pointing in an opposite direction, as seen in Fig. 17. When it is desired that the light from both lanterns shall be projected upon the screen simultaneously, the fans are provided with hinges close to the rod upon which they are fastened, that covering the lens for the time being swung towards the screen, thus exposing both lights.

As we have said, in the case of oil it is found necessary to keep both lights burning throughout the entertainment. Quite different, however, is it when the lime-light is used, for with this, the dissolving effect is produced by lowering the light in the one lantern at the time it is being turned on in the other ; but as it is inconvenient to have a series of taps to turn on and off as occasion demands, special combination taps have been devised to meet this requirement.

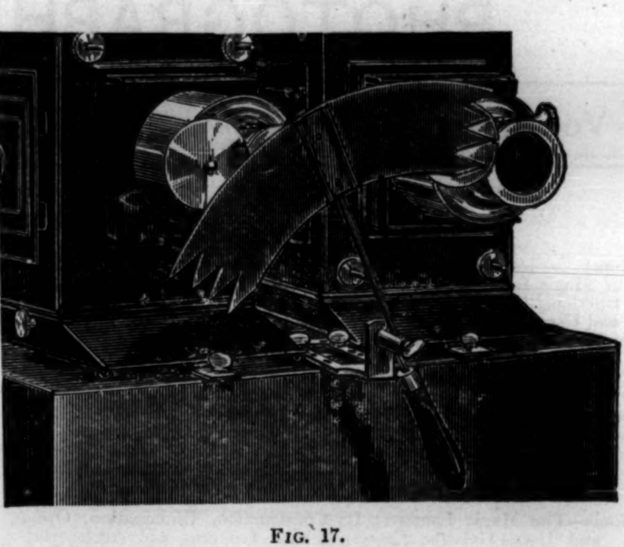

Fig. 17.

When the oxy-calcium or spirit jet is used, the spirit is allowed to burn, and the supply of oxygen only is turned off or lessened. Such a dissolving tap to answer the purpose must have a double branch at the top, so that the oxygen may be diverted from one lantern to the other. A convenient tap of this nature is shown in Fig. 18. By

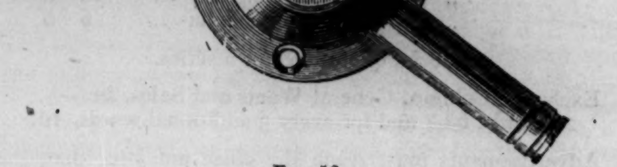

Fig. 18.

turning the handle to whichever branch the light is required, the oxygen is supplied to the one, and cut off from the other, and to both lanterns when the lever is placed mid-way.

When the oxy-hydrogen light is used, the dissolving tap is of a more complicated order, for not only has the oxygen to be diverged, but the supply of house-gas or hydrogen must also be under control. In the form shown at Fig. 19, which is the invention of Mr. Wood, there are two separate taps, the levers of which are connected by a rod, so that both move in unison. The oxygen supply is admitted at A, and the hydrogen at B. The tubes D and E leading to the lanterns in the tap cross each other so that in the case of two lanterns standing side by side, both sets of oxygen and hydrogen tubes will be immediately behind each lantern. The oxygen is conveyed at C and E, and the hydrogen at D and F, the alternation being effected by the movement of the lever G. As it is essential that a small flame be allowed to burn during the time the light is suppressed, a small jet of hydrogen is kept burning, so as to avoid re-lighting. This supply is regulated by means of a by-pass, as is shown in the cut.

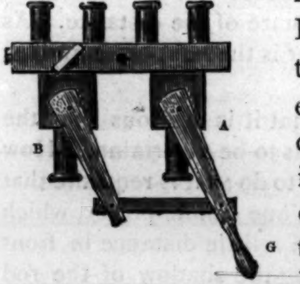

Fig. 19.

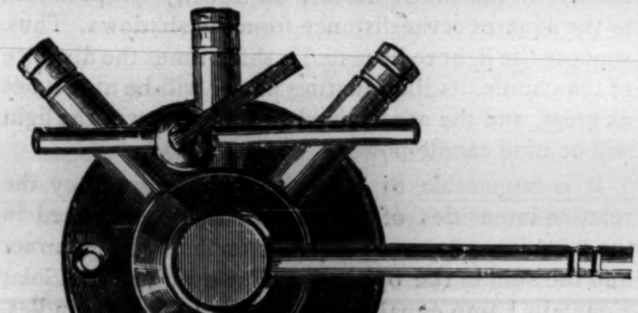

Fig. 20.

In the bi-unial lantern, a form which is now almost universally employed, one lantern is placed above the other, the dissolving tap may be of the form shown at Fig. 20. This class of tap is supplied with by-passes for both hydrogen and oxygen, by which a small supply of both gases is allowed to reach the limes to keep them hot.

A dissolving tap for use with three lanterns is a much more complicated affair than the foregoing, although the general principle is the same. Not only must it be capable of directing the gases to any one lantern, but also to two and even to three at once when desirable. There are in this case six supply tubes to be under control, and if each had a separate tap to be turned on and off, the difficulty can be better understood than expressed; but the ingenuity of lantern-makers and exhibitors has happily overcome all difficulties in this direction, as illustrated in the cut Fig. 21. All that it is necessary for the operator to do is to manipulate the handles; the by-passes are adjusted by means of the small thumb-screws shown.

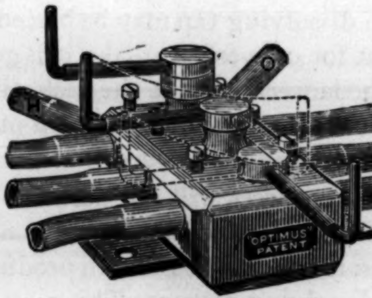

Fig. 21.

Another conjunction of taps to achieve the same result is by first setting a lever (Fig. 22), and then turning a tap. Its mode of working will be understood by the following:—The supplies of hydrogen and oxygen are attached to HB and OB respectively. Then O2 is connected

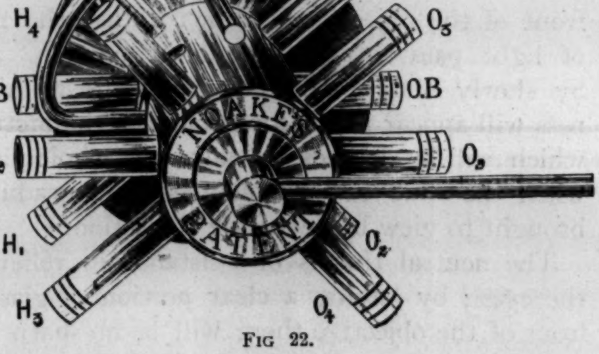

Fig 22.

with O2, and H2 with H2. The other outlets are each connected to the jets thus—H1 and O1 to top jet; H3 and O3 to middle jet; and H4 and O4 to the bottom jet. The straight handle is termed the coupler, and the bent one the dissolver. According to the angle at which the coupler is set, so are the different lanterns coupled. With this dissolver the bye-passes are each arranged from a small cock in the service pipe and are not included in the tap itself.

Another style of tap which needs little explanation is one which is furnished with a dial. In this case the index handle is merely moved to the required combination.

Complex as many of these dissolvers may appear, yet when fitted on the lantern it is surprising with what ease and certainty they are manipulated. Of course the dissolving tap may be placed almost anywhere, but for convenience sake it is generally attached to the lantern itself at the back, that position being found to be preferable, as it is out of the way of being accidentally moved.

When one's resources will not permit of two or more lanterns, and it is not the intention to exhibit effects, it is quite possible to produce upon the screen a dissolving picture. This may be done by procuring a strip of clear glass, and converting a portion of it into ground glass. The junction between the clear portion and the ground part must be gradually vignetted; the ground glass portion may then be stained with transparent oil colour of a neutral tint, the colours being laid on thinner and thinner as they approach the clear end of the glass. This strip is made to slide in suitable grooves close in front of the objective. When in use the rays of light pass through the clear portion, and by slowly sliding the glass upwards a mistiness will appear in the foreground of the picture, which will by degrees envelope the whole view; when the slide can be changed, and gradually brought to view by reversing the action.

The neutral tint is of assistance in relieving the eyes; by having a clear portion of glass in front of the objective there will be no sharp line of demarkation; and by commencing the dissolving at the bottom of the picture a better effect will be produced than if it were begun at the top, for in the majority of cases the foreground is the darkest part of the picture.

To Ascertain the Candle Power of a Light.

MANY are in the habit of speaking of a light as being of so many candle-power, but if asked how they ascertained it, the answer will in many cases be that it was a rough guess. If an object intervene between a white screen and a light, no matter of what intensity, a shadow must necessarily be cast upon the screen. If the light employed be a strong one, the shadow cast will be more intense than if the light had been of less brilliancy. As light loses a great deal of its force the farther it is removed, so the farther the light is from the object spoken of, the less dense will be the shadow cast, such loss being the square of the distance. As is well known, a candle-power is the light of a standard candle.

Let it now be supposed that it is desirous that the candle-power of a given light is to be ascertained. How must we proceed? In order to do so it is requisite that we ascertain the strength of one candle-power, which is best done by placing a rod a little distance in front of a white screen and allowing the shadow of the rod from a candle placed a little distance beyond to fall upon the screen; this shadow then represents one candle-power. We next consider the light to be tested. If it be more intense than the one candle, the shadow of the rod cast from it will be deeper, both lights being placed at the same distance. Now move the light that is being tested to such a distance from the rod that the shadows assimilate in density, which may easily be ascertained when they are side by side. The intensity of the two lights will be directly proportional to the squares of the distance from the shadows. Thus, suppose the light to be tested is three times the distance of the candle, its illuminating power will be nine times as great, and the ascertained candle-power of the light will be nine candle-power.

It is impossible to give with definite accuracy the relative intensities of the various lights employed in the lantern, as so much depends on the forms of burner and the skill of the operator. For example, the Solar Fountain Lamp equals from twenty to forty candles, according to the diameter of the flame, the purity of the oil, and the perfect adaptation of the chimney.

Lamps of the Sciopticon class, according to the number and length of their wicks, will vary from thirty to seventy-five candle-power, sometimes even exceeding this figure.

The Spirit or Oxy-calcium light is by very many considered to range much lower than the ordinary blow-through or safety gas jet, but this arises from the imperfection of construction and not from any inherent defect in the principle of illumination, not but that it is slightly inferior to the other, but not to the extent usually stated. A good lamp of this kind can be made to produce an illuminating power equal to one hundred and eighty candles, a Safety or Blow-through jet exceeding this by from ten to fifteen candle-power more.

With mixed gases in one of the best burners it is possible to obtain a light exceeding four hundred candle-power.

Two Hints to Workers with the Lantern.

THERE are two qualities of chlorate of potash at present in the market—a cheap German make, which can be sold at about fourpence per pound; and English made chlorate, which costs from sevenpence to ninepence. My advice is to eschew the former. Once or twice I have found it of fair quality; but, as a rule, it is cheap and unreliable.

Most workers with oxygen gas are troubled, more or less, by the tendency of the gas to come off in rushes, passing through the purifying bottles so rapidly that it does not get properly washed. I find that the addition of a little dry common salt steadies the flow of gas wonderfully. My present formula is—Chlorate of potash, 1lb.; black oxide of manganese, 4oz.; common salt, 2oz.

W. JEROME HARRISON, F.G.S.

Lanterns and Accessories. —III.

(Continued from page 29.)

THERE was another very ingenious slide changer, patented I believe by Mr. Alexander Cowan as to the curtain effect, and Mr. Matthew Whiting as to the slide-changing apparatus, both well-known names in the photographic world. The slides are arranged in a box, delivering them one at a time to the carrier and passing them through the lantern, quite automatically, by the reciprocating movement backwards and forwards of a handle, the slides being delivered into another box in their proper order. The effect of changing arrangement was that of a curtain falling over the picture and rapidly rising again on a fresh one. The apparatus was, I believe, brought out by Messrs. Houghton and Co., of High Holborn, London.

Within the last few years what is known as the *Lightning Carrier* has had a great run. It is as old as the lantern, but has only lately been generally adopted, and therefore better constructed now than the earlier models. It may be briefly described as a skeleton holder with a stout rail of about five or six inches long at the top, and a similar rail of about twice that length at the bottom. This is simply adjusted in the lantern and fixed there by the spring usually attached to the stage. The carrier, which slides in suitable grooves in the holder, is double—that is, there are two slits in the top rails, in which two different 3¼in. slides drop into place in grooves made for that purpose. It is slid backwards and forwards across the field, registering more or less accurately according to the positions of slots at either end of its journey across the field. Usually, however, it is not at all accurately *fitted*, and the consequence is that when the one slide out of the two which it carries is being changed, the remaining one, then being shown on the screen, is very liable to "jig." The operator of course does not see this dancing of the picture, as he is too busy changing his views, but the spectators do, and they don't like it.

I would recommend any reader who has one of these carriers, and I know of nothing better if carefully fitted, to take a little trouble with it by packing it so that it will work sweetly without any appreciable play in the holder.

A simple way of using it is to cover the lens for a second while the carrier is being pushed across and uncapping as soon as that is done; but the best plan is to arrange a flap shutter, working noiselessly if possible, just behind the objective (front lens). It must hinge at the bottom and be square, then the effect will be that of a curtain falling on the picture and rising again in one second on a fresh one. The spectators will not *rise*, as was a printer's error in the last word of article No. 1 for *tire*. GEORGE SMITH.

◆

A NEW LIMELIGHT.—In a letter from Mr. A. W. Scott, of Weston-super-Mare, he says:—"I am now busy with a new limelight, which I hope to put on the market shortly. It consists of an apparatus charged with two different inflammable liquids (not ether), through which oxygen, from a gas-bag under moderate pressure (three 56lb. weights), is passed. This apparatus may be used as an accessory to the oxy-ether light to increase its brilliance. Used thus it improves the light from four hundred and fifty to seven hundred and twenty standard candles—the former (four hundred and fifty) being obtainable with ether alone. The apparatus makes a corresponding increase with the oxy-hydrogen light (high-pressure mixed jet). In this case the coal-gas from a small bag is passed through the apparatus. The consumption of oxygen is increased and that of coal-gas decreased. But the best light of all is obtained by using the apparatus without ether and without coal-gas. I have not yet taken its candle-power, though I have used it for six public exhibitions. The working cost of the apparatus is one penny per hour. It is absolutely safe; cannot be blown up, and gives less trouble than filling a bag with coal-gas in the ordinary way. I have the papers for provisional protection now in my hands. When arrangements for patenting, &c., are complete I shall be at liberty to give more details."

Wanted, a Dark Room.

MANY a student of photography has sighed for the possession of a dark-room—so easy to dispense with at first, so perfectly indispensable afterwards. Several expedients are resorted to in order to devise what is but a sorry substitute. I once made a temporary one which answered my purpose admirably, and had all the charm of originality. It was constructed with a couple of screens, made of rough light framework, covered with two thicknesses of brown paper, sized and painted to match the wall. They were placed at right angles to each other and stood in a corner of the room, thus forming a square. Of course, they had a few nails to hold them in place, and their junction with wall, floor and ceiling was made light-tight with slips of brown paper. With a table, a few movable shelves, and water brought in through an india-rubber tube, I developed hundreds of negatives, lantern transparencies and bromide enlargements with all the comfort of having a special shrine for my photographic deity.

In constructing the dark room in this simple manner, that fold of the screen which forms the door should shut into a framework formed of slips of wood in such a manner as to trap the light.

I always object to being closeted with a malodorous lamp. This is easily avoided by placing the lamp on a shelf outside a sheet of ruby glass let in the framework.

It is a great convenience to be able to leave the room in case of protracted development, &c., and double doors may be used for this purpose; but by having a small box to fit over developing trays, one can go in and out at pleasure.

I have been induced to jot down these few lines because I know so many amateurs who regard a dark room as being as unattainable as a good studio, instead of which a "handy" man will find it within the scope of a few hours' work.

CHAS. A. PALMER.

How I Make Lantern Transparencies.

I WISH to describe *pro bono publico* how I made at a small cost a transparency camera by which I can make lantern slides from half-plate negatives without any kind of adjustment or focusing being required.

I had constructed for me by our village carpenter a common deal box without ends, of the following external dimensions: 6in. high, 8in. deep, and 20in. long. At one end I fixed two grooved strips of wood capable of allowing a negative 4¾in. by 6½in. to slide in; then at ten inches from this end I inserted a piece of wood in such a manner as to divide the box into two divisions. The lens of 4½in. focus was cemented into one end (convex surface out) of a piece of tube one inch long, a stop of one-eighth of an inch being placed in the other end. This I inserted in a hole in the centre of the division, which was then fixed, after having made the distance between the convex surface of the lens and the negative equal to 10⅛in., the lens end of the mount being nearest to the negative. I proceeded to fit another division about two inches from the other end; this division has an aperture in the centre, three inches square. I then attached a small strip of grooved wood at the lower portion of this opening, and at the upper side I also attached a grooved strip of wood, but the groove in this case was twice as deep as that at the lower portion of the aperture. The measurement must be such that the distance of a sensitive plate inserted in these grooves will measure eight and one tenth inches from the convex side of the lens.

When this was completed I made a door to close this end of the box, and in order to ensure it fitting so as to exclude all light, I tacked a piece of cloth edge around it. Having finished all the woodwork I gave the whole thing a coating of black varnish, both inside and out. When I wish to make a lantern transparency I slide my negative in at the one end, and, in the dark room, insert the sensitive plate at the other under the upper groove, and then set it upon the lower one, shut the door and go out into the ordinary light and expose.

I use a small stop in the lens for the two-fold purpose of ensuring sharpness and allowing me sufficient time to make an exposure.

The achromatic lens, which I obtained unmounted, cost four shillings; I paid the carpenter one shilling for supplying the wood and making the box. Estimating the other sundries at twopence, the whole outfit has cost me five shillings and twopence.

ANDREW C. COLE.

THE following are the judges' awards in the Newcastle-on-Tyne and Northern Counties Photographic Association Lantern Slide Competition: Section A.—Open to all professionals and amateurs in the world. One silver and one bronze medal, presented by the president, A. S. Stevenson, Esq., J.P., Tynemouth, for not less than twenty-four slides. Silver medal, John W. Wade, 14, Ridgefield, Manchester; bronze medal, Cyril Frith, Brightlands, Reigate. Section B.—Open to amateur members only of the Newcastle-on-Tyne and Northern Counties Photographic Association. One silver and one bronze medal, presented by J. P. Gibson, Esq., Hexham, vice-president, for the best six slides. Each competitor may not send more than twelve slides. Silver medal, Edgar G. Lee, 11, Beverley-terrace, Cullercoats; bronze medal, Henry R. Procter, 38, Percy-park, Tynemouth. The judges were Messrs. John G. Allison, P. M. Laws, and C. J. Spence.

Renovating Battered Lanterns.

WITH even the greatest care in the treatment of a japanned tin lantern, the black outside coating will sometimes chip off, causing unseemly white patches to appear.

The remedy most usually recommended in such a case is the application of Brunswick black. From personal experience in attempting the renovation of a battered lantern, I would very strongly dissuade anyone from making the attempt with this material, as the smell is for a long time after very offensive.

A much better method, and one with which I have been very successful, is to give it a coating of a mixture of lampblack and lacquer, or ordinary photographic varnish, and when dry to give it both solidity and gloss by a coat of mastic or copal varnish. This dries hard, is very tough, and unlike Brunswick black does not give off any smell. RICHARD TATE.

Editorial Table.

The Practical Index of Photographic Exposure.—A fourth edition of this useful set of exposure tables has been issued. Great care has evidently been bestowed upon this work by Mr. A. R. Wormald to make it a companion to outdoor photographic workers, so that one may ascertain at a glance the necessary exposure under given conditions. The book is very neat, and in addition to the tables, contains much useful information.

WE have received the catalogue of Messrs. Theobald and Co., of Kensington, and also a sample case of coloured lantern slides of all sizes and styles. This firm makes a speciality of lithographic slides, which they both design and manufacture. Those who themselves desire to effect the transference to glass may obtain the lithographic transfers in sheets.

MESSRS. W. HOOPER AND CO., High Holborn, have sent us a number of gold-stamped and silver-printed mounts with Christmas mottoes. These are for mounting photographs upon and present a neat appearance.

◆

MR. C. FERRERO, writing from the Camera Club, says:—"I notice in your last issue the description of a lantern-slide carrier, introduced by Mr. Ramsden. Will you allow me to state that last winter I made a carrier, having all the points enumerated in your description—viz., the arrangements for introducing the slide, for centreing and withdrawing the slide, besides some other novel features? It was used at the Camera Club, and Mr. F. W. Stanley, of London Bridge, showed it at the Crystal Palace Photographic Exhibition."

Applications for Patents, 1889.

No. 13676.—August 30, W. J. Lancaster, "Photographic camera shutter."

No. 13699.—August 30, W. H. Kerry, "Improvements in photographic cameras."

No. 13712.—August 30, R. D. Bowman, "Improved process for the production of oxygen gas."

No. 13892.—Sept. 3, R. W. Thomas, "Photographic dark slide."

Correspondence.

LANTERN FLANGE SCREWS.

[*To the Editor.*]

SIR,—We notice in your issue for 15th inst. a letter from Mr. G. B. Courtenay, advising the use of standard screws for lantern objectives.

We should like to call attention to the series of standard screws for photo lenses, recommended by the Photographic Society of Great Britain. These screws are steadily becoming better known and appreciated. We ourselves fit all our photographic lenses and lantern objectives with screws of this series, and we think the time will come when all our English makers of lenses will adopt the system. But in our opinion, such a desirable change can only come about in the first place through public demand. There is no advantage to any lens maker, but rather a great disadvantage and loss entailed in changing the size of his screw fittings; but if the public would insist upon having standard screws any optician would be ready to supply them.—Yours faithfully, TAYLOR, TAYLOR AND HOBSON.

Leicester, Sept. 16, 1889.

SOCIETY LANTERN NIGHTS.

[*To the Editor.*]

SIR,—Photographic societies, both amateur and professional, are now on the eve of commencing their lantern nights. On some of these evenings only a few slides are brought by the members, too many trusting to their fellow members to supply a sufficient number. This is not as it should be. I think that when a lantern night is on hand it should be made a rule that each member on entering hand in at least three lantern transparencies. There are few of us who have not during the year made several slides, and if these few would also join the ranks I feel assured that it would add to the greater success of a pleasant evening's entertainment.—Yours, &c., SEDILS.

Newcastle.

Camera-Club Notices.

Thursday, Oct. 17th, 8 p.m.—Description and demonstration, by Mr. Lyonel Clark, of his platinum toning process.

Thursday, Oct. 24th, 8 p.m.—Lantern evening. Members are requested to inform the secretaries if they can bring slides.

Thursday, Oct. 31st, 8 p.m.—Discussion on "Eikonogen," to be opened by Mr. H. M. Elder, M.A.

Monday, Nov. 4th, 8.30 p.m.—Smoking concert. Offers of assistance requested.

Thursday, Nov. 7th, 8 p.m.—Mr. Andrew Pringle will read a paper, entitled, "One Hundred and Thirty Exposures." Paper will be illustrated by examples.

Selections.

LANTERN-SLIDE making is growing to be one of the most fascinating branches of photography, being easier and more satisfactory to do than silver printing.—*F. C. Beach.*

⁂

To any person having a knowledge of the development of dry plates, success in making transparencies is guaranteed if he would only obtain a dozen dry plates, quarter size, of any standard make and patiently experiment with them upon one subject.—*Edward Viles.*

⁂

IT is found in practice, when enlarging considerably the subject copied, that it is much more effective to focus by moving the said object to and from the lens, than to focus in the ordinary way by altering the back of the camera.—*R. H. Preston.*

⁂

IN copying engravings, woodcuts, &c., the lines given by the engraver are very often, when magnified to a large size, too conspicuous on the sheet, and I have seen some things exhibited which, when on the screen, looked like one of the flaming posters on the walls and hoardings that are now so frequently seen announcing the various performances of the day.—*T. Gulliver.*

⁂

SOFT varieties of lime may be used with advantage for the oxy-calcium lamp; but only hard lime should be employed for the oxy-hydrogen jet. This lime is formed into the shapes required, usually into cylinders, and these are put into bottles and sealed up so as to preserve them from the action of the atmosphere.—*A. A. Wood.*

⁂

WITH ordinary care and attention the limelight is easily managed, and by its means the lantern becomes in the hands of an intelligent photographer a means of profit and entertainment unthought of a few years ago.—*William Hanson.*

⁂

IT may not be generally known that a thoroughly gas-tight connection can be immediately made between an india-rubber tube and metal pipe. Having pushed on the india-rubber tube to a sufficient distance, it is only necessary to roll back the front part of it.—*Edward Viles.*

⁂

THE brain needs no training to see erect with an inverted image, because it is a physical fact that an image projected through a convex lens is inverted—the reason for placing slides in a magic lantern upside down.—*Author of "The Philosophy of Sight."*

⁂

THE lantern season is at hand, and we may make the "winter of our discontent" a "glorious summer" by making slides.—*Geo. Wheeler.*

⁂

THE *sine qua non* of a lantern slide is that it shall be absolutely clear in the high lights.—*W. Bishop.*

⁂

DAGUERRE had made his reputation as a painter of panoramas, and was well-known in connection with his efforts to improve dioramic effects long before he announced his discovery of the Daguerreotypic process.—*C. E. Pearce.*

BRASS LACQUER.—A beautiful gilding may be given to brass and bronze by a lacquer composed as follows:—Rectified spirit, three hundred and thirty-two parts; shellac, sixteen parts; dragon's blood, four parts; turmeric root, one part. The metal intended to be lacquered is warmed, and the varnish applied by means of a brush or sponge. The solution should be kept in a stoppered bottle.

Notes and Queries.

B.—The slides have been returned to the owner. We feared they were rather too coarse.

Garrett, J.—We replied to your query in our last issue.

Chromotrope asks if it would be safe to use house gas in conjunction with compressed oxygen, when a mixed jet is used. *Answer.*—No; better employ a blow-through jet.

W. C. Cook writes to say that he has tried the use of ground glass, as recommended by Mr. Alfred Watkins, in the September number of this journal, and is well pleased with the results; "but," he adds, "it must be very finely ground, otherwise the sketch has a rough appearance when exhibited on a screen."

Opal.—If you return the spoiled cards to Mr. Friese Greene, he will send you good ones in exchange, without extra charge.

Zoopraxiscope asks how Mr. Muybridge changes his pictures (of animals in motion) upon the screen. Are they *one* basis with moveable parts, or are they a series of pictures? *Reply.*—The figures are placed in consecutive order near the rim of a circular plate of glass; another plate of glass is placed parallel to the first. This second disc is opaque all but a number of clear lines, radiating from the centre. When the two discs are rotated rapidly in opposite directions, the apparent size of the figures becomes diminished, and instead of seeing a procession of animals in different attitudes, the idea is conveyed that the same image is assuming various positions.

H. Lacy asks, "What is a polytropochromaticon?" *Answer.*—It is similar to a kaleidoscope, and it is used with coloured substances, such as broken glass.

Th. Farrant.—There is no necessity to have two sets of pressure boards. Why not make one suffice, by placing the gas-bags one over the other? One set of weights will then do. But if gas is laid on at the hall, why not use it instead of hydrogen?

N. B.—No. 4 on your list will answer your purpose better than No. 2; but as you say you intend being in London in a few weeks, postpone purchasing until then, when you can call upon the firm and inspect the various styles. We shall be glad to see you. Thanks for your good wishes.

Smell of Oil.—See our issue of June 15th, pages 3 and 4.

Trade.—Write to Messrs. York and Son. They have lately produced the Paris set about which you enquire.

Sobu writes:—"I have a very old quarter-plate photographic portrait lens, mounted in wood, which I am desirous of converting into a lens for a magic lantern, so as to shew a disc four or five feet in diameter. Can this be done, and how? The lens is the usual double combination." *Reply.*—The lens described is the same as those now universally employed with but few exceptions. It will require no alteration, unless a brass tube be substituted for the wooden one.

We have received the catalogue of Mr. Underhill, Croydon, which contains particulars of a variety of slides.

B. W.—We cannot offer an opinion on the data mentioned.

Miss H.—The slide sent is very creditable, but the foliage is rather darkly coloured; a little picking out would be advantageous.

A. W. S.—Thanks for particulars.

W. S.—(1) We will send copies to the persons mentioned. Thanks for the interest yon take on behalf of this journal. (2) There is no difference in the illumination between the two classes of lenses, the difference, if such exists, being in their defining properties.

A Subscriber (Greystones).—There is no place here where the *Scientific American* can be purchased, but special numbers may be ordered through Trubner and Co., Ludgate Hill, London. The number inquired about is that for the week ending May 11, 1889.

Bull's-Eye.—The "Flashes" came too late for this issue.